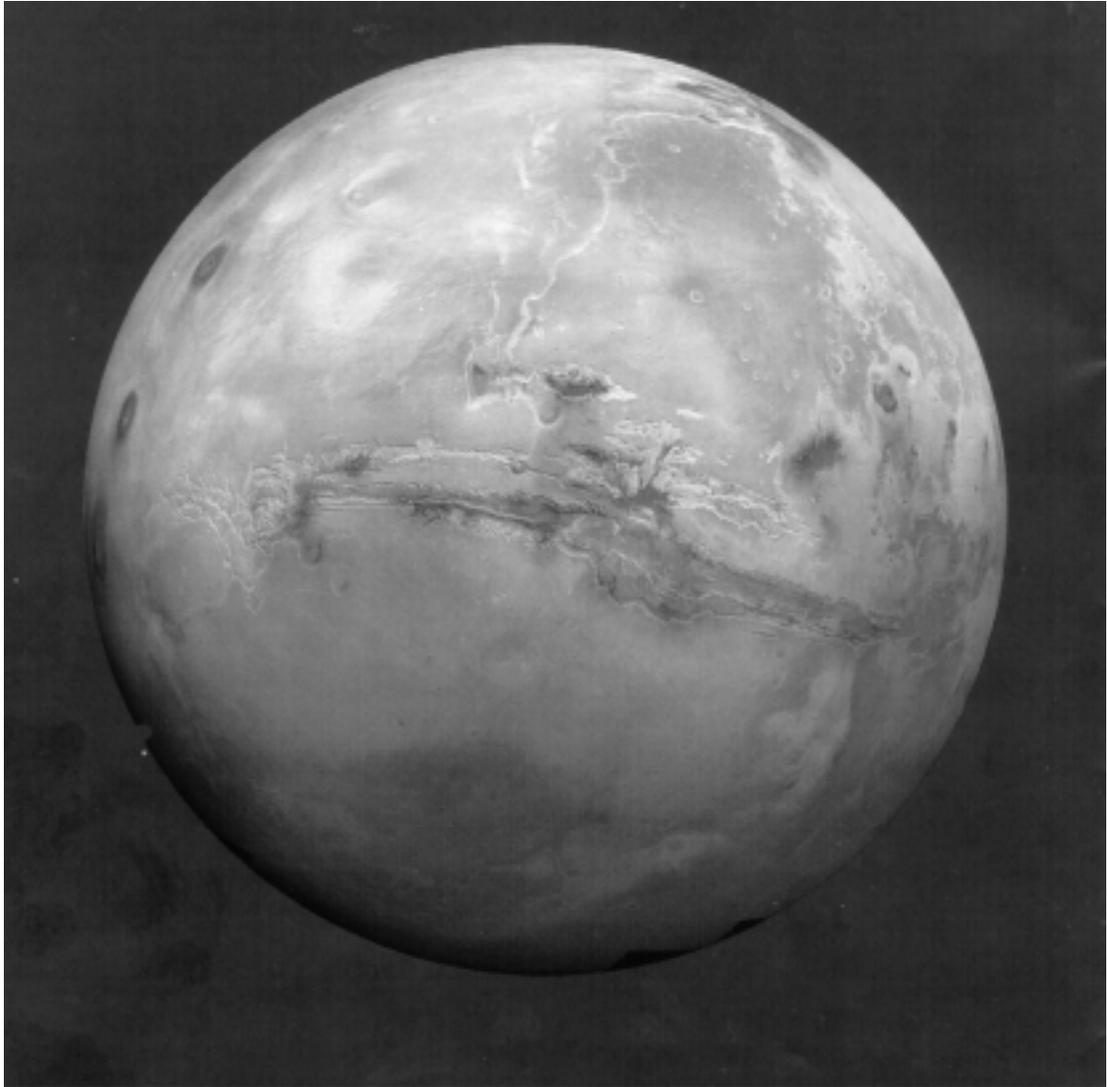


## Image Set A: High-Contrast Images



*Image 1. Mars hemisphere. Scale: Mars is 6,787 km in diameter.*

### *Image 1 Questions*

- What is the feature across the middle?
- What do you think the circles on the left side are?

# Appendix H

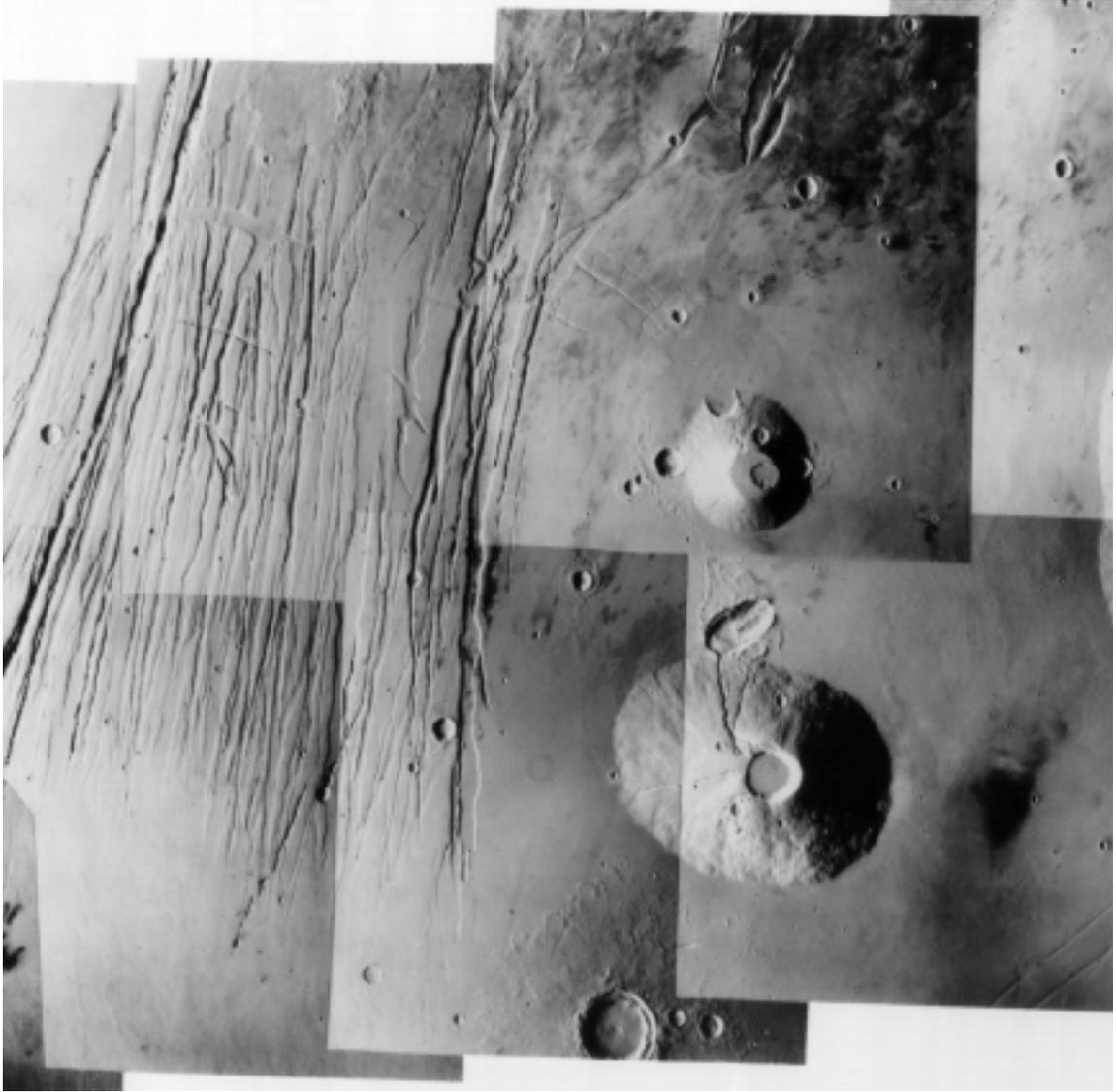


*Image 2. A view across the Argyre Planitia. Scale: The large crater in the upper right is about 200 km in diameter.*

## ***Image 2 Questions***

- What is the line on the horizon above the Martian surface?
- How high above the surface is it?
- What causes it to be visible?



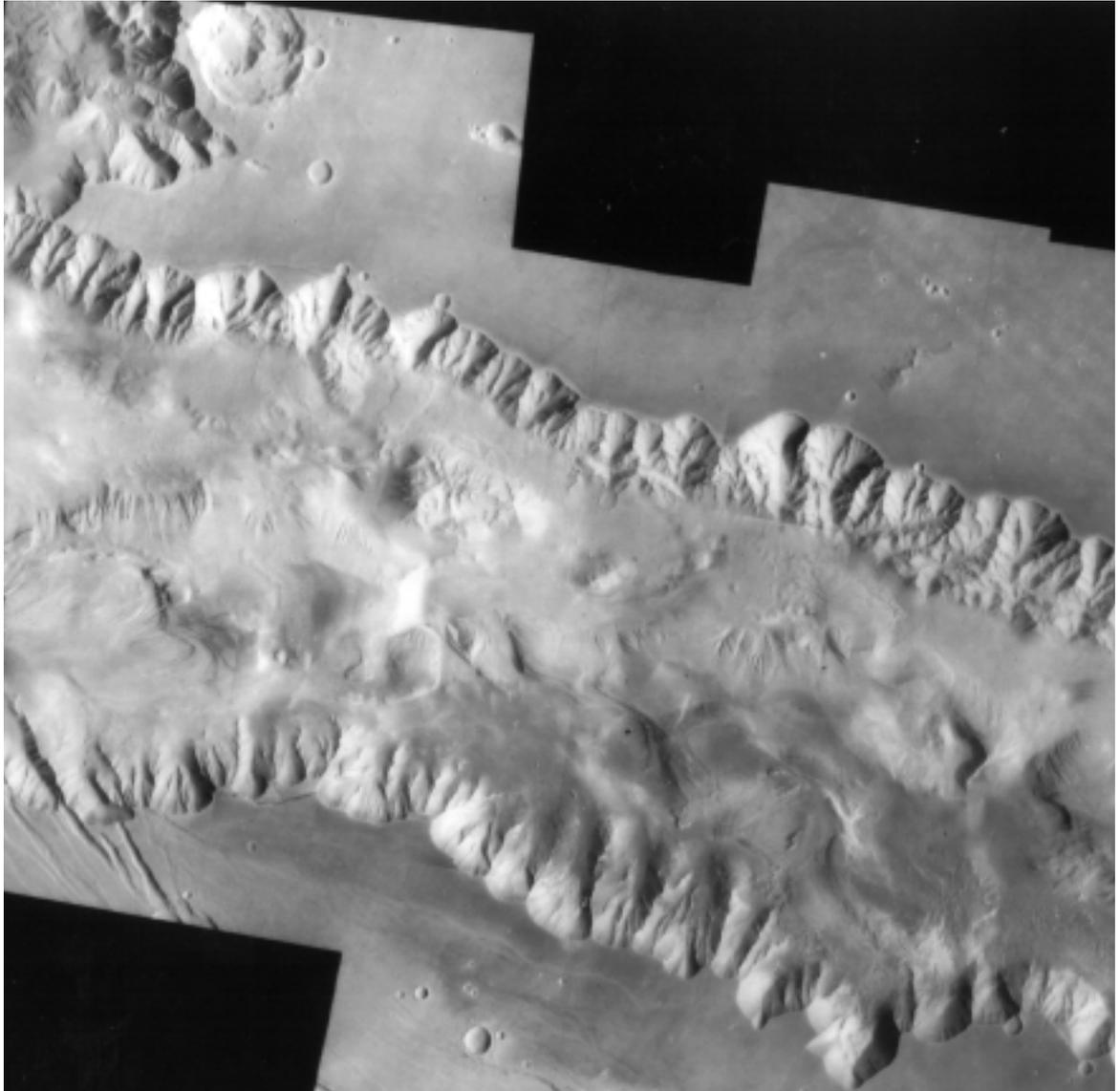


*Image 3. Martian volcanoes and fault lines. Scale: The lower volcano is 90 by 130 km.*

### ***Image 3 Questions***

- Which came first, the volcano or the impact craters? How can you tell?
- What might have caused the channels on the side of the volcanoes?
- What are the lines in this image? What might have caused them?

# Appendix H



*Image 4. A section of the Candor Chasm. Scale: This section is about 125 km wide and 8 km deep.*

## ***Image 4 Questions***

- What do you think caused the valley?
- What do you think shaped the cliffs on the edges of the canyon?
- How did this canyon get so wide?



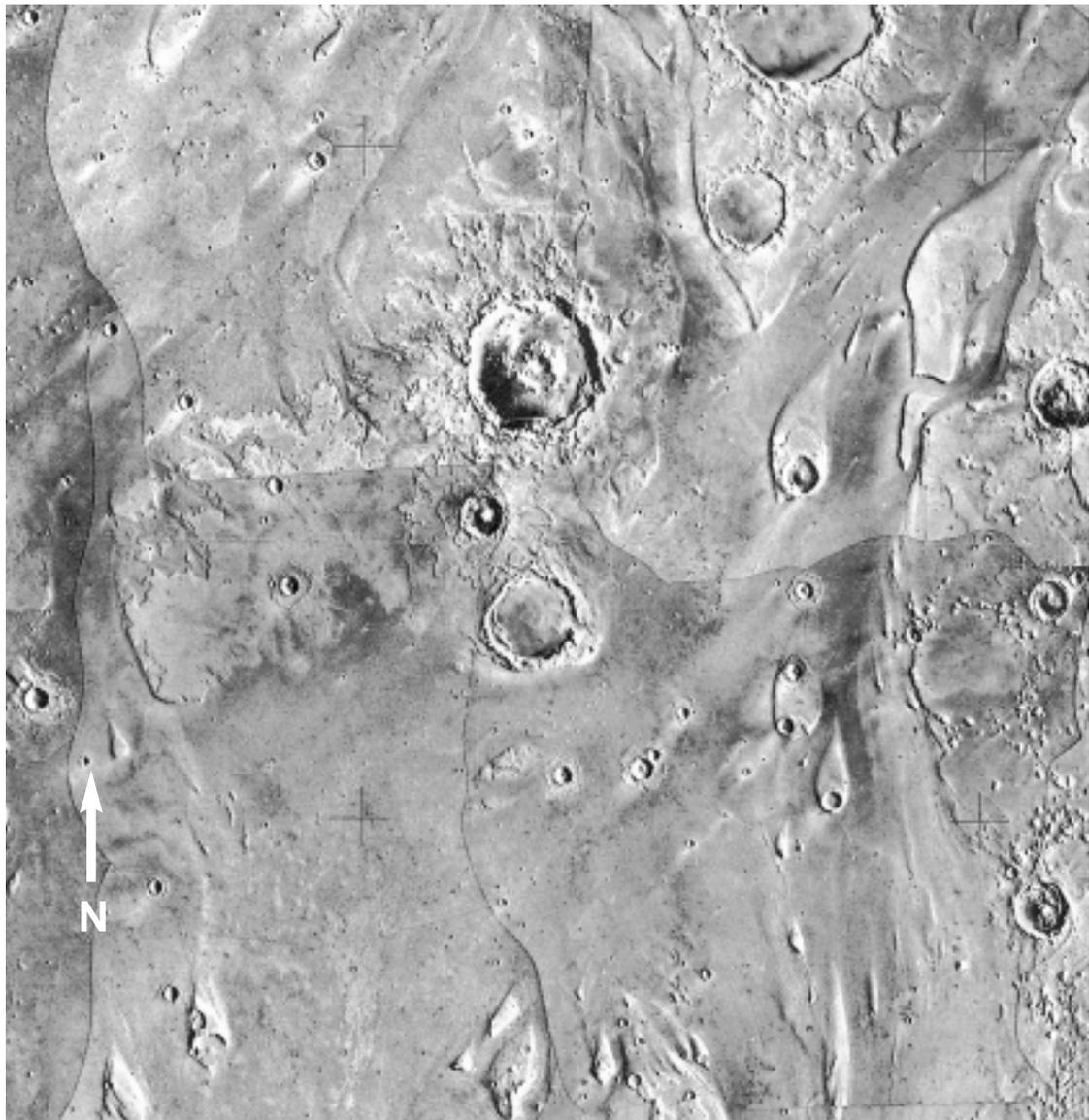


*Image 5. Landform at the mouth of the Kasei Vallis. Scale: The crater in the lower right is about 100 km across.*

### ***Image 5 Questions***

- Explain which came first, the fractures or the large crater in the center left?
- Which came first, the crater in the bottom center or the channel?
- Which direction did the fluid flow? Is any fluid apparent now?
- What caused the “tails” behind the small craters in the channel?
- What sequence of events and processes makes most sense in explaining all these features?

# Appendix H

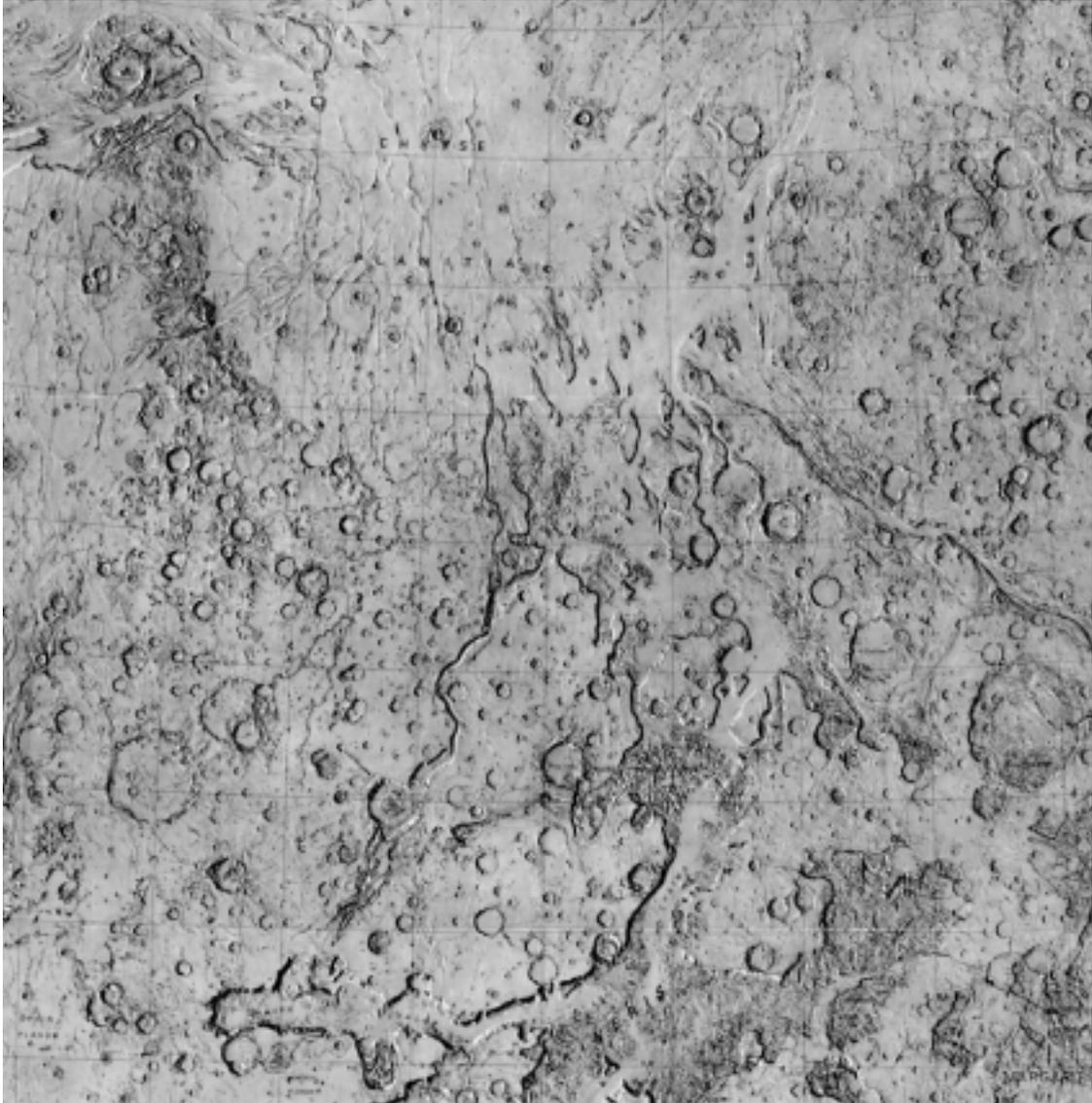


**Image 6.** *Pathfinder's landing site at the mouth of the Ares Vallis. Scale: The dark crater near the center is about 60 km across.*

## **Image 6 Questions**

- What do you notice about this region?
- How might the teardrop-shaped landforms have formed?
- What might make this region a desirable landing site?
- Do you see anything that might make this an interesting area to explore?



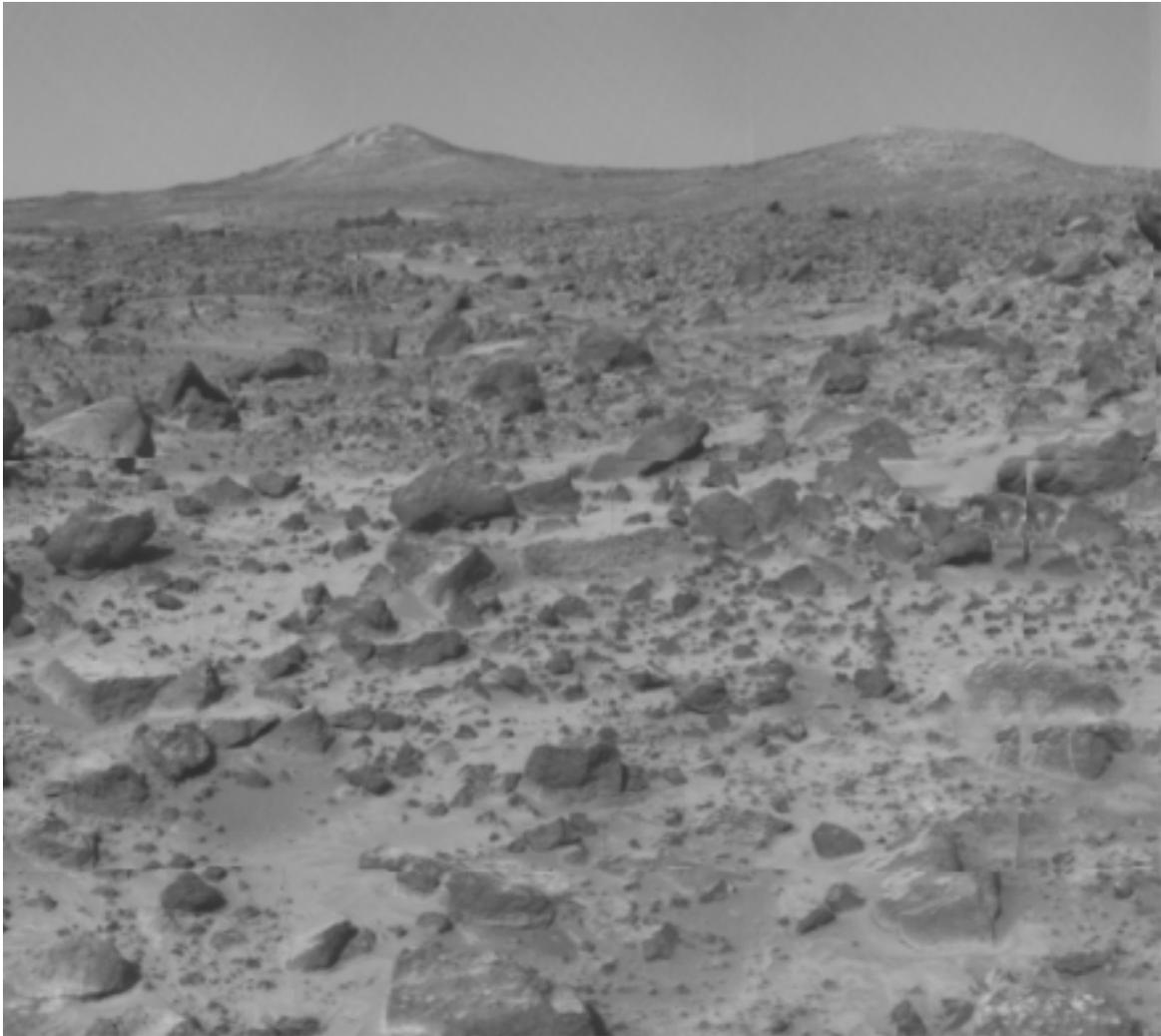


*Image 7. Regional view of Ares Vallis and the Chryse Planitia. Scale: The map shows an area roughly 3,000 by 3,400 km.*

### ***Image 7 Questions***

- How big is this area?
- What is the general topography of this region? Which direction is uphill?
- How much water flowed in this region, a little or a lot?
- From where might the water that flowed in these channels have come?
- Why is the area at the end of the channel so smooth?
- What do you think the Chryse Planitia looked like when water flowed in the channels?
- Describe the distribution of craters in this region.
- What might explain this pattern of distribution?
- What are some differences between the craters on the plain and in the highlands?

# Appendix H

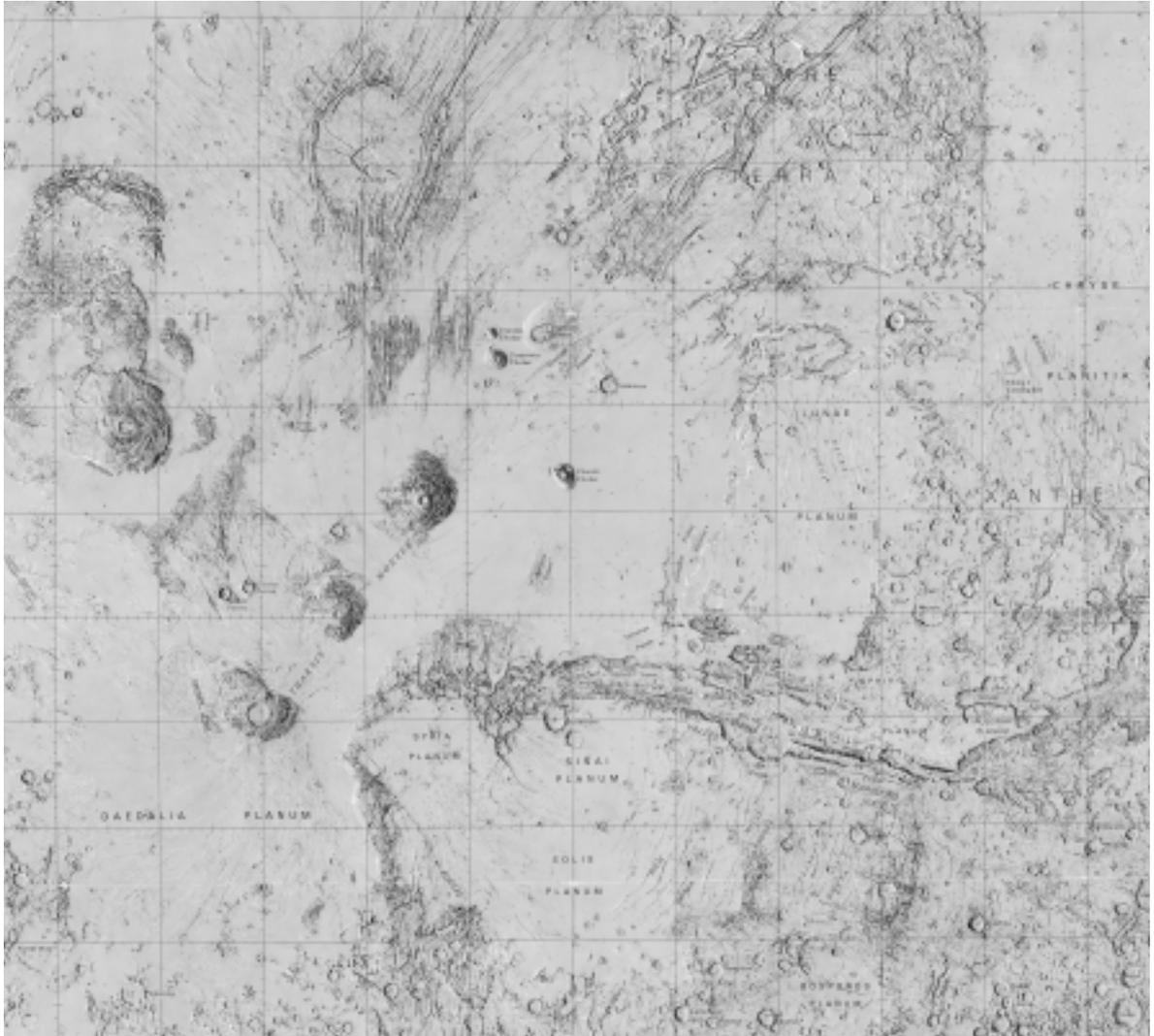


*Image 8. The view from Pathfinder toward Twin Peaks. Scale: The Twin Peaks are about 1 km away and are about 50 m tall.*

## ***Image 8 Questions***

- Does this look like any place on Earth?
- Why did the landing site look so smooth when it is really full of boulders?
- What are some ways a plain such as this can become littered with rocks?



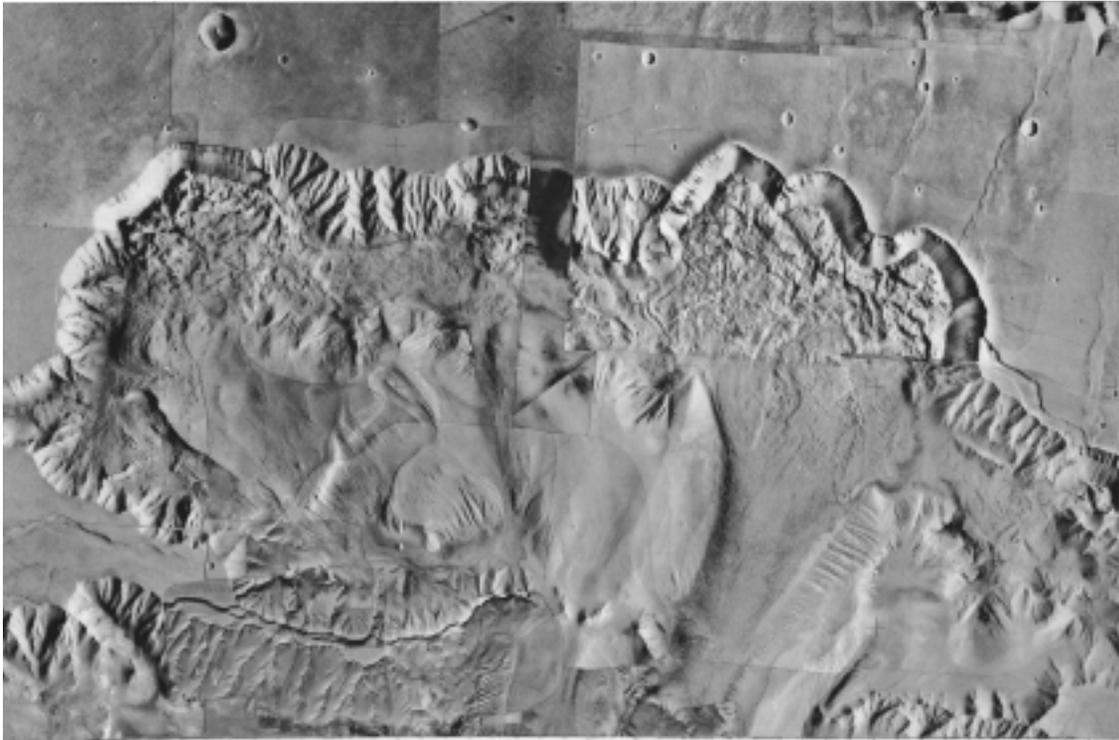


**Image 9.** Valles Marineris and the surrounding region. Scale: Olympus Mons, the left-hand most volcano, is about 600 km in diameter. The map shows an area roughly 8,250 by 6,750 km.

### **Image 9 Questions**

- How many volcanoes can you find?
- How long is the large canyon?
- Does the canyon seem to be a single formation or a series of smaller, distinct canyon systems?
- What might explain having volcanoes, fractures, and canyon systems in one area of Mars?

# Appendix H



*Image 10. The Ophir Chasma. Scale: The Ophir Chasma is about 125 by 325 km, and the walls are about 5 km tall.*

## ***Image 10 Questions***

- What processes have affected this canyon?
- Why might the plateau be so smooth?



*Image 11. The Nani Vallis. Scale: The image size is 9.8 by 15 km, and the canyon is about 2.5 km wide.*

### ***Image 11 Questions***

- What processes have affected this canyon?
- What evidence is there for the idea that water flowed here?
- What evidence is there against the idea that water flowed here?

# Appendix H

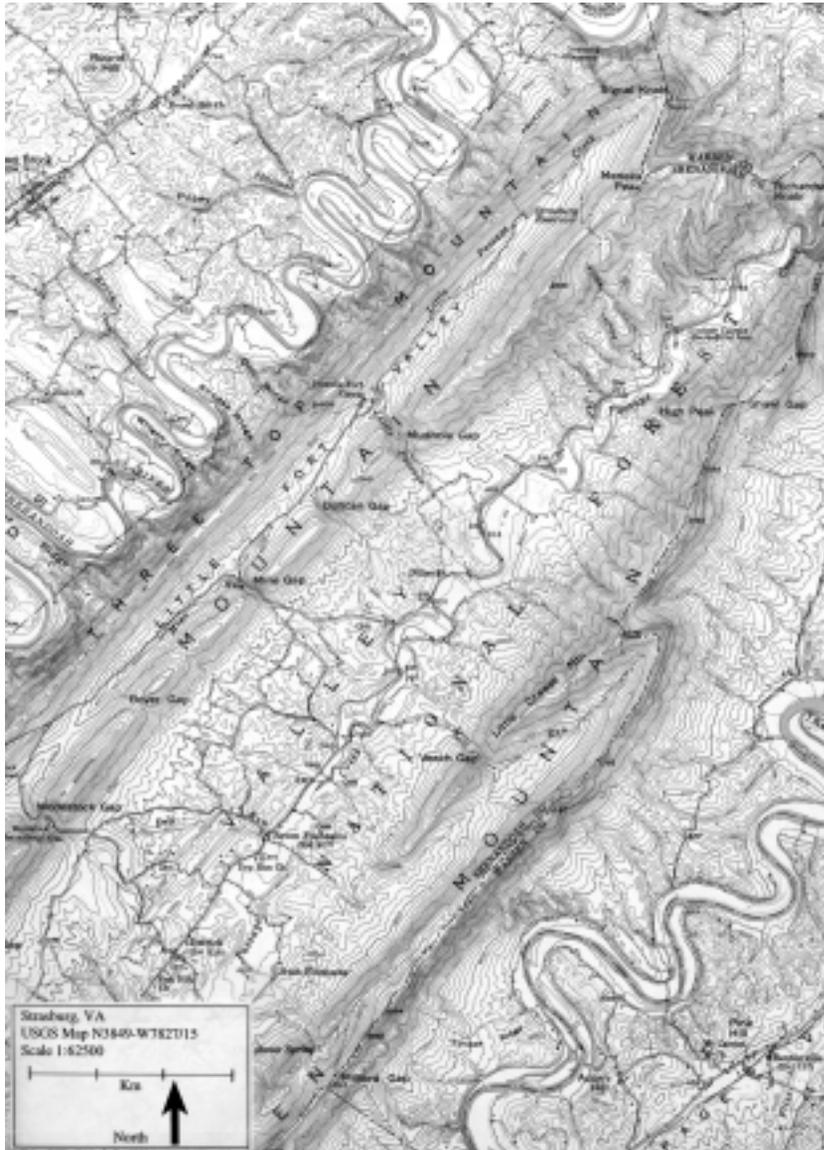


*Image 12. Oxbows and meanders on the Red River in Campti, Louisiana. Scale: The area shown is about 10 by 17 km.*

## ***Image 12 Questions***

- How are the two banks different as the river goes around a bend?
- How did the oxbow lakes form?
- How does the Red River compare with the Naniedi canyon?



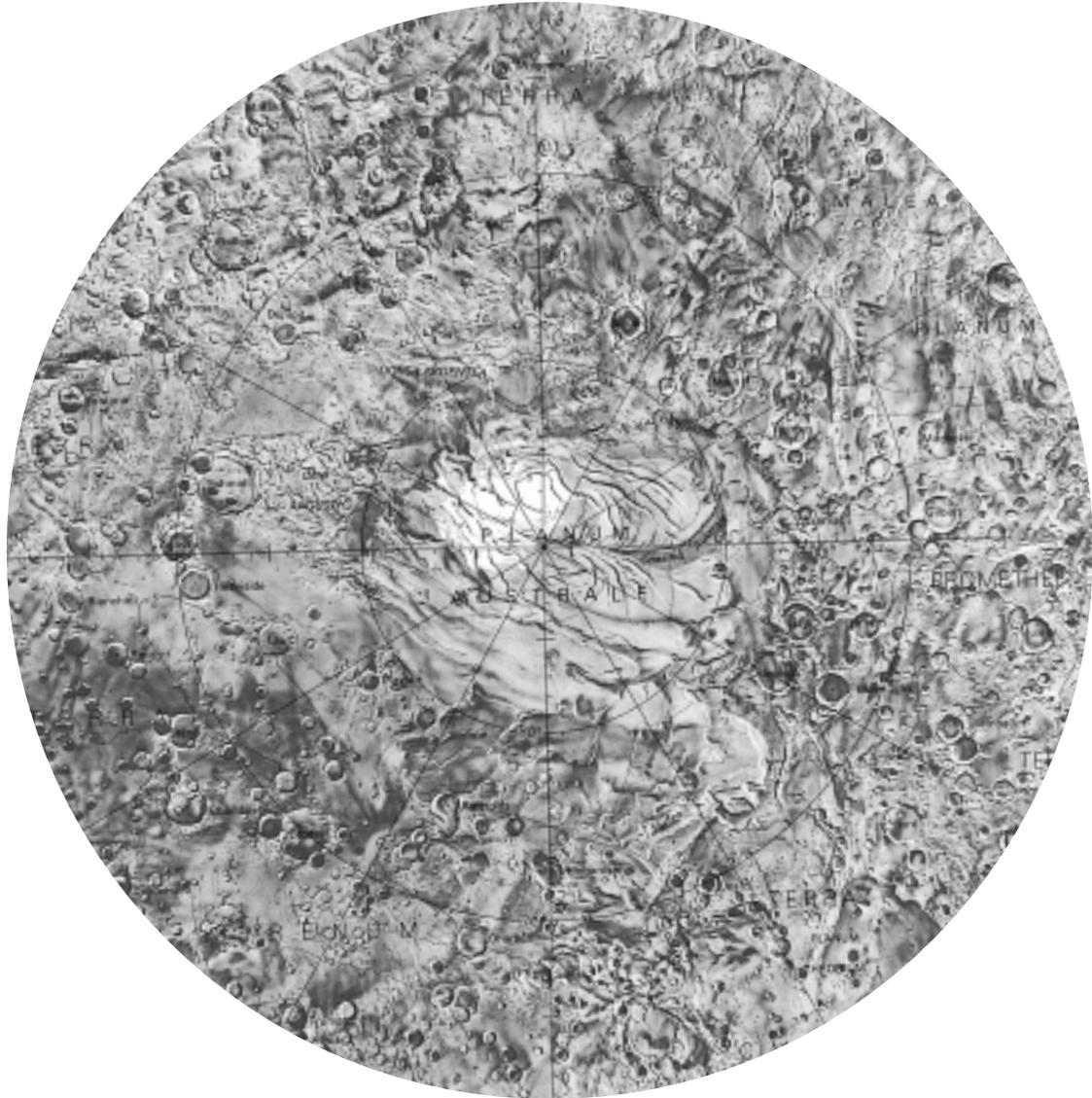


*Image 13. Meanders on the Shenandoah River near Strasburg, Virginia. Scale: The area shown is about 13 by 17 km.*

### ***Image 13 Questions***

- How do the valleys carved by the Shenandoah and Red Rivers compare to the Nanedi Vallis?
- How long might it take for a river to form a valley of this size?
- On which side of each sharp turn is the bank steeper?
- What factors might influence how quickly a valley forms?

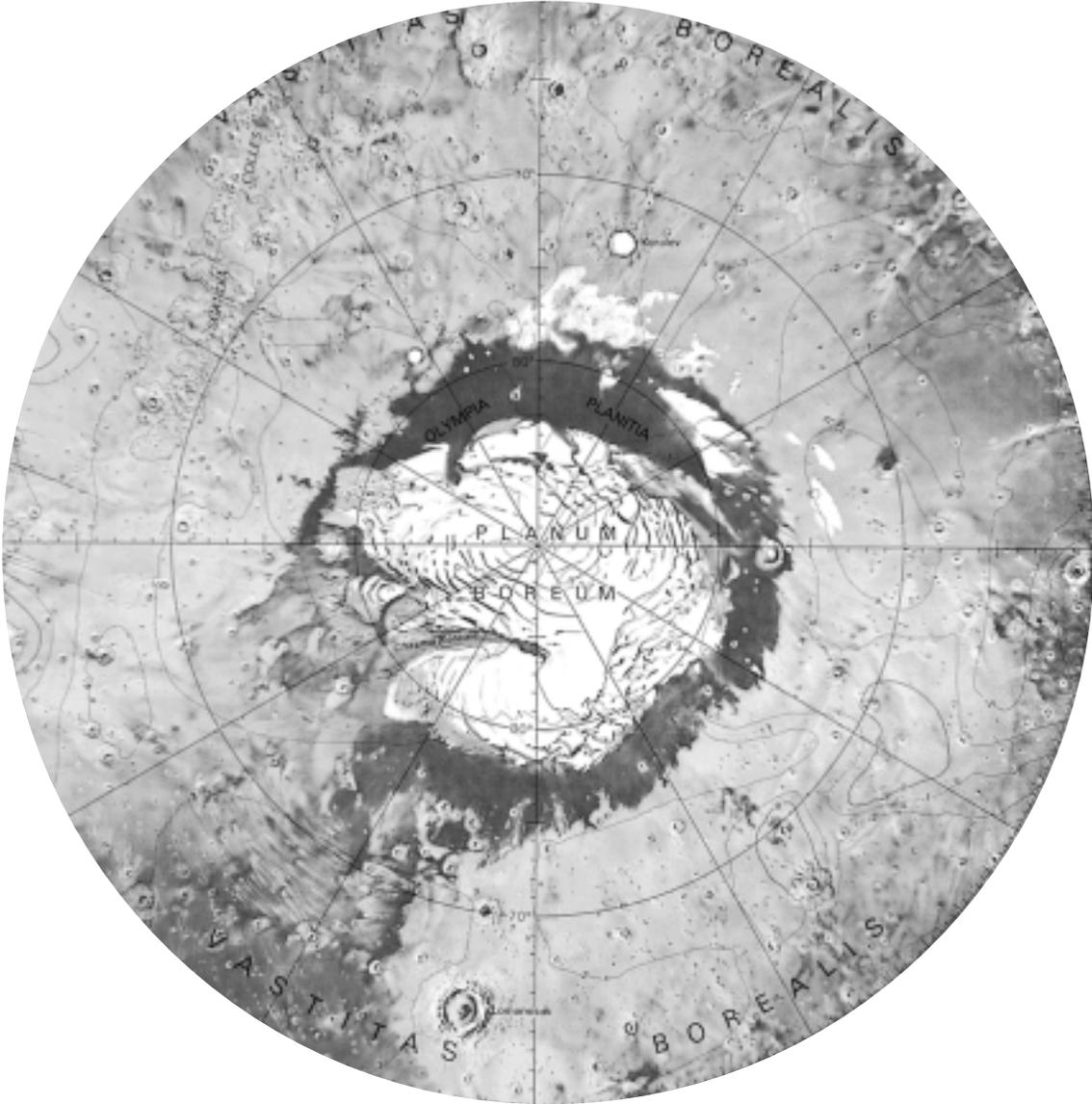
# Appendix H



*Image 14. The Martian South Pole. Scale: This view is about 3,375 km across.*

## ***Image 14 Questions***

- How might one tell whether the poles are covered with water ice or dry ice?
- What might cause the spiraling shape of the poles?



*Image 15. The Martian North Pole. Scale: This view is about 3,375 km across.*

### **Image 15 Questions**

- How might one tell whether the poles are covered with water ice or dry ice?
- What might cause the spiraling shape of the poles?

